

Shepley Hills/Bates Land Invasive Species Management Project Receives Grant

At the GCT May annual meeting, New England Wildflower Society botanist Ted Elliman gave his talk on invasive species to a packed room. Everyone, it seemed, was eager to understand what can be done to manage this threat. And now, thanks to a \$14,000 General Endowment Grant from The Community Foundation of North Central Massachusetts and the continuing efforts of volunteers, the GCT will move forward with a management project for two critical properties, Shepley Hills and The Bates Land, with the additional goal of sharing the evaluation of these efforts with other property stewards in the region.

According to Trustee Mark Gerath, The Community Foundation grant supports programs and projects pertaining to community development and the environment and since consideration is given to projects that are “strategic, innovative and sustainable” the GCT project was a good fit.

Invasive plant species now pose an immediate and significant threat to the ecological integrity of our properties. Among many other conservation organizations, the New England Wildflower Society has recognized the devastating effect of invasive plants on ecosystems:

“Not just pushy garden thugs, invasive plant species disrupt natural habitats, impacting native plant species and animals, vertebrates and invertebrates. New England Wild Flower Society, in collaboration with towns, state and federal agencies, land trusts, universities, and various conservation organizations throughout the region plus many dedicated field volunteers, is assessing the impacts of invasive exotic species on the New England landscape and engaging in projects to combat the spread of these species.”

[New England Wildflower Society](#)

While the GCT is an all voluntary organization, trustees include several members with the scientific expertise necessary to recognize the effects on our own properties. Two are educators with extensive backgrounds in field ecology and in the development and execution of ecological studies. Two work in the field of site assessment and remediation and in the transport of materials through soil and water. It is this expertise that enabled the Trust to develop the project.

The Initial Need and Plan

Beginning in the summer of 2012, the GCT began a formal ecological inventory of our properties, including an assessment of the extent of invasive species on each parcel. Two interns under the direction of trustee David Black, a PhD in ecology, mapped the invasive species as well as critical core habitat and the distribution of protected species. With the help of trustee Michelle Ruby, inventory work continued in the summer of 2013 and a pilot project was initiated on our Shepley Hill property, a site that enjoys heavy recreational use but which also supports significant populations of Japanese barberry, Tatarian Honeysuckle, buckthorn and other invasive plants growing in the headwaters of an important wetland system. All told, our volunteer trustees contributed hundreds of hours to this effort.

At Shepley Hills, area of approximately one acre was identified: all invasive plants in that area were cut close to the ground and were treated by hand application of an herbicide. Student interns, under the direction of trustees David Black, Rick Muehlke and Michelle Ruby, seeded the area with a wetland stabilization mix to foster restoration of native species. This summer we will return to the site and will record the change in the species composition and the effects of the treatment on the regeneration of the target species. This work will be done by a GCT summer intern, a college student whose studies are focused on the biology of invasive plant species, working under the supervision of trustees. We learned much from this work. The rate of invasive species removal was much slower than anticipated, an important factor for land managers with limited financial and labor resources..

Our data analysis this coming summer will be critical to the evaluation of this technique, but at this time, it does not appear that this is a solution up to the challenge of the GCT and other land managers in central New England. This summer, with our grant from Community Foundation of North Central Massachusetts, as well as GCT's own funds and labor, we will explore alternatives.

Expectations of the Project

The project proposes to carry out additional studies on the Shepley Hill property and on our Bates Land property evaluating three different control techniques for efficacy and cost effectiveness. We will establish 12 plots including the one begun in 2013 and clear each of invasive plant species using physical control (removal by pulling), foliar spraying of the plants with glyphosate, and stem cutting with herbicide application. In the physical control and stem cutting plots, reseeded will be done with an appropriate stabilization mix.

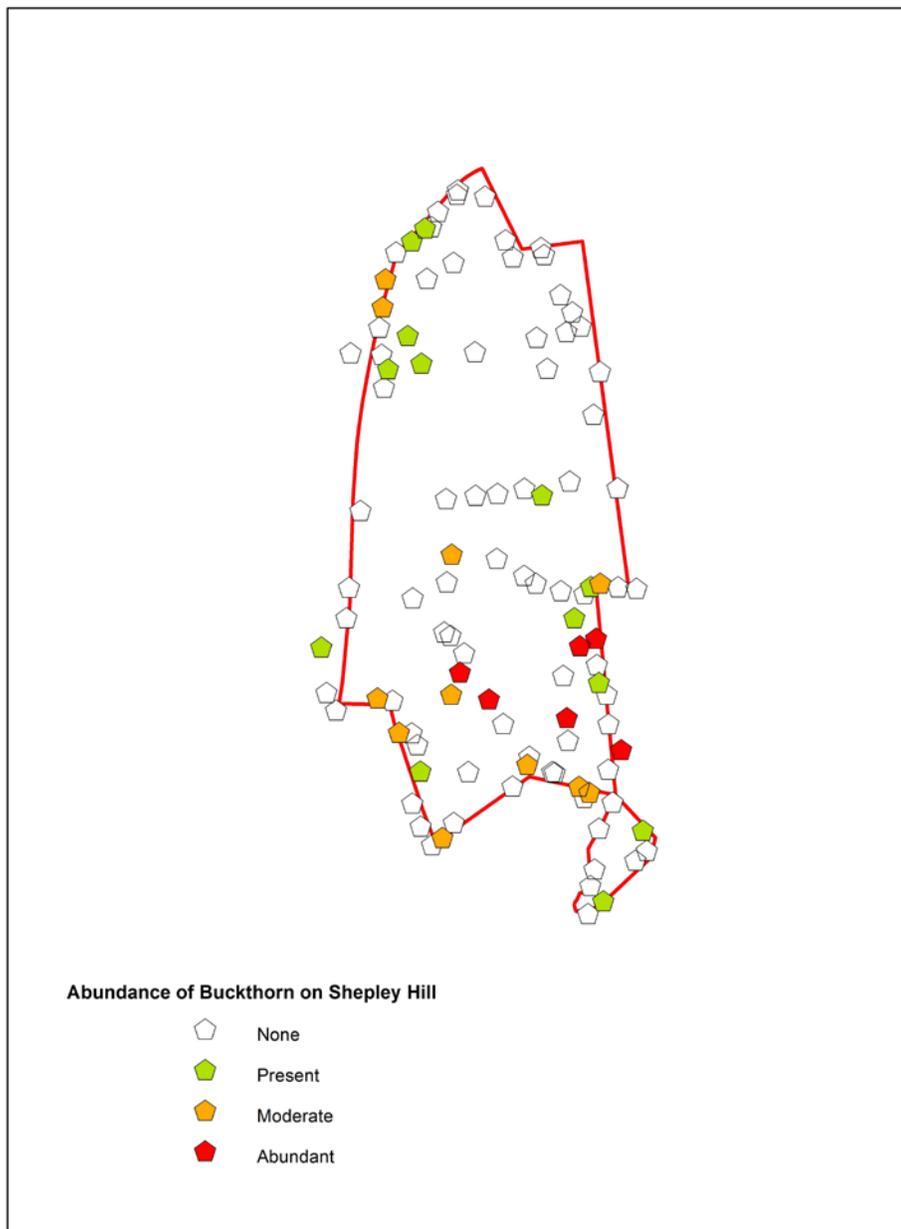
The goal of this work is threefold: first to restore the ecological integrity of the system, creating a small but viable native species preserve; second to evaluate different control technologies appropriate for use by conservation land owners; and thirdly to involve a group of volunteers in the effort. This last goal would help us to educate the community about the complexities involved in land conservation and management. While many feel that preventing development and establishing conservation areas protect a region's biodiversity, it is increasingly clear to the Trust that more active management is required. Through the education planned during this effort, the GCT will keep the community apprised of the changing goals and needs in land management.

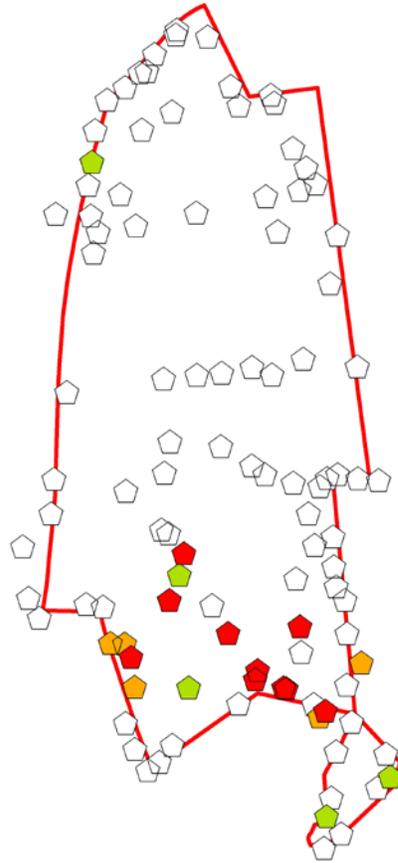
We are also committed to sharing the results of our study with other land trusts and plan to clearly mark the study area for others to visit and evaluate. This dissemination of information to other organizations is a critical component of this project. This issue confronts all land managers, both public and private, in this area and an exchange of ideas and an evaluation of efforts to meet this challenge will be critical to addressing this problem.

The grant from the Community Foundation of North Central Massachusetts will allow us to make significant progress on our goals. The initial clearing and establishment of the plots constitutes the majority of the work in a project like this. Future years will require monitoring of the site, using trained volunteers supplemented by those with more formal academic backgrounds in the field. Periodic work to eliminate unwanted plants that recolonize the site will be done on a regular basis, and the level of effort required to maintain the cleared areas will be documented and included in the long-term monitoring study of the project area. The GCT is committed to this effort and will ensure that this work occurs in the future and is grateful to [The Community Foundation of North Central Massachusetts](#) for the funds necessary to meet these goals.

For more information about this project, contact Michelle Ruby, ruby@gctrust.org or Mark Gerath, gerath@gctrust.org.

The following are two examples of the widespread nature of invasive plants on the Shepley Hills land:





Abundance of Barberry on Shepley Hill

-  None
-  Present
-  Moderate
-  Abundant